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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/769,756	02/03/2004	Kyung-geun Lee	1293.1993	8918

49455 7590 03/02/2007  
STEIN, MCEWEN & BUI, LLP  
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SUITE 300  
WASHINGTON, DC 20005

EXAMINER
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ALUNKAL, THOMAS D

ART UNIT	PAPER NUMBER
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2627

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/02/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/769,756	<b>Applicant(s)</b> LEE, KYUNG-GEUN	
	<b>Examiner</b> Thomas D. Alunkal	<b>Art Unit</b> 2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 03 January 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,4-25 and 27-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4-25 and 27-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1,4-13,15-24, and 31-32 are rejected under 35 U.S.C. 102(e) as being anticipated by Kondo et al (hereafter Kondo) (U.S. 6,930,977).

Regarding claim 1, Kondo discloses a read-only optical information storage medium (Column 14, lines 49-52) comprising a plurality of areas (Figure 20), including a burst cutting area (Column 17, lines 3-4), a lead-in area (Column 16, lines 63-64), a user data area (Figure 20, Element 311), and a lead-out area (Figure 20, 311, outer circumference) in which data is recorded in the form of pits (Column 16, lines 59-Column 17, line 7. As shown in US Patent 5,617,408, Figure 3, the BCA has a materially different pit pattern than is disposed upon the remainder of the disc. This is due to the fact that the information in the BCA is different than that of the remainder of the disc. Thus, the pit patterns cannot be identical and are different), wherein a pattern of pits formed in the burst cutting area is different from a pattern of pits formed in at least one of the lead-in area and the user data area (Column 16, lines 59-Column 17, line 7).

Regarding claim 4, Kondo discloses the pattern of pits formed in the burst cutting area is one of a first straight pit and first pit wobble (Figure 21, Element 15a and Column 7, lines 3-5. The pit array closest in the inner circumference coincides with the burst cutting area), and the pattern of the pits formed in at least of the lead-in area and the user data area is one of a second straight pit row that is different from the first straight pit row and a second pit wobble that is different from the first pit wobble (Figure 21, Elements 15b-15d).

Regarding claim 5, Kondo discloses each of the first straight pit row and the second straight pit row has pits formed in one of a single straight pit pattern, a specific straight pit pattern, or a random straight pit pattern (Figure 21 shows random pit patterns).

Regarding claim 6, Kondo discloses each of the first pit wobble and the second pit wobble is one of a single pit wobble pattern, a specific pit wobble pattern, or a random pit wobble pattern (Figure 21 shows random pit patterns).

Regarding claim 7, Kondo discloses at least one of the burst cutting area, the lead-in area, the user data area, and the lead-out area is divided into a plurality of sub-areas, and wherein pits in each of the sub-areas are of different pit patterns (Figure 21, Elements 15b-15d. Elements 15b-15d represent the lead-in area, which after the BCA, starts from the inner circumference).

Regarding claim 8, Kondo discloses the lead-in area includes first and second areas, pits are formed in the first area in one of a third straight pit pattern and a third pit

wobble pattern (Figure 21, Element 15b), and pits are formed in the second area in one of a fourth straight pit pattern and a fourth pit wobble pattern (Figure 21, Element 15c).

Regarding claim 9, Kondo discloses each of the third straight pit pattern and fourth straight pit pattern is one of a single straight pit pattern, a specific straight pit pattern, and a random straight pit pattern (Figure 21 shows random pit patterns).

Regarding claim 10, Kondo discloses each of the third pit wobble and the fourth pit wobble is one of a single pit wobble, a specific pit wobble and a random pit wobble (Figure 21 shows random pit patterns).

Regarding claim 11, Kondo discloses wherein the user data area includes a plurality of basic recording units (Figure 17, ECC Block), and run-ins and run-outs that are respectively located before and after the basic recording units (Figure 17, Sync Blocks).

Regarding claim 12, Kondo discloses the basic recording units are one of physical clusters, sectors, ECC block (Figure 17, ECC Block), and frames.

Regarding claim 13, Kondo discloses a pattern of pits formed in the basic recording units is identical to a pattern of pits formed in the run-ins and run-outs (Column 8, lines 4-6).

Regarding claim 15, Kondo discloses each of the first pit wobble and the second pit wobble is one of a single pit wobble pattern, a specific pit wobble pattern, or a random pit wobble pattern (Figure 21 shows random pit patterns).

Regarding claim 16, Kondo discloses at least one of the burst cutting area, the lead-in area, the user data area, and the lead-out area is divided into a plurality of sub-

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areas; and wherein pits in each of the sub-areas are of different pit patterns (Figure 21, Elements 15b-15d. Elements 15b-15d represent the lead-in area, which after the BCA, starts from the inner circumference).

Regarding claim 17, Kondo discloses the lead-in area includes first and second areas, pits are formed in the first area in one of a third straight pit pattern and a third pit wobble pattern (Figure 21, Element 15b), and pits are formed in the second area in one of a fourth straight pit pattern and a fourth pit wobble pattern (Figure 21, Element 15c).

Regarding claim 18, Kondo discloses each of the third straight pit pattern and fourth straight pit pattern is one of a single straight pit pattern, a specific straight pit pattern, and a random straight pit pattern (Figure 21 shows random pit patterns).

Regarding claim 19, Kondo discloses each of the third pit wobble and the fourth pit wobble is one of a single pit wobble, a specific pit wobble and a random pit wobble (Figure 21 shows random pit patterns).

Regarding claim 20, Kondo discloses at least one of the burst cutting area, the lead-in area, the user data area, and the lead-out area is divided into a plurality of sub-areas, and wherein pits in each of the sub-areas are of different pit patterns (Figure 21, Elements 15b-15d).

Regarding claim 21, Kondo discloses the lead-in area includes first and second areas, pits are recorded in the first area in one of a third straight pit pattern and a third pit wobble pattern (Figure 21, Element 15b), and pits are recorded in the second area in one of a fourth straight pit pattern and a fourth pit wobble pattern (Figure 21, Element 15c).

Regarding claim 22, Kondo discloses wherein the user data area includes a plurality of basic recording units (Figure 17, ECC Block), and run-ins and run-outs that are respectively located before and after the basic recording units (Figure 17, Sync Blocks).

Regarding claim 23, Kondo discloses the basic recording units are one of physical clusters, sectors, ECC block (Figure 17, ECC Block), and frames.

Regarding claim 24, Kondo discloses a pattern of pits formed in the basic recording units is identical to a pattern of pits formed in the run-ins and run-outs (Column 8, lines 4-6).

Regarding claim 31, Kondo discloses a read-only optical information storage medium (Column 14, lines 49-52) comprising a plurality of recording layers (Column 14, lines 15-18) each having a plurality of areas (Figure 20) in which data is recorded in the form of pits, wherein the pits in at least one of the plurality of areas are of a different pit pattern than pits formed in others of the plurality of areas (Column 16, lines 59-Column 17, line 7. As shown in US Patent 5,617,408, Figure 3, the BCA has a materially different pit pattern than is disposed upon the remainder of the disc. This is due to the fact that the information in the BCA is different than that of the remainder of the disc. Thus, the pit patterns cannot be identical and are different).

Regarding claim 32, Kondo discloses a read-only optical information storage medium (Column 14, lines 49-52) having a burst cutting area (Column 17, lines 3-4), a lead-in area (Column 16, lines 63-64), a user data area (Figure 20, Element 311), and a lead-out area (Figure 20, 311, outer circumference), each of which is divisible into a

plurality of areas (Figure 25), one of the areas of the burst cutting area having data recorded thereon in a first pit pattern (Column 16, lines 59-Column 17, line 7. As shown in US Patent 5,617,408, Figure 3, the BCA has a materially different pit pattern than is disposed upon the remainder of the disc. This is due to the fact that the information in the BCA is different than that of the remainder of the disc. Thus, the pit patterns cannot be identical and are different) and one of the areas of the lead-in area, the user data area, and the lead-out area having data recorded thereon in a second pit pattern (Column 16, lines 59-Column 17, line 7. Specifically, the lead-in area has its own pit pattern).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kondo et al (hereafter Kondo) (U.S. 6,930,977) as applied to claims 1,4-13,15-24, and 31-32 above, and further in view of Nagaswara et al (hereafter Nagaswara) (U.S. 6,069,869).

Regarding claim 14, Kondo discloses all limitations of parent claims above. Kondo does not disclose a pattern of pits formed in the basic recording units is different from a pattern of pits formed in the run-ins and run-outs. Kondo discloses identical pit



patterns. However Nagaswara discloses a pattern of pits formed in the basic recording units is different from a pattern of pits formed in the run-ins and run-outs (Column 6, lines 11-15). Nagaswara discloses that using a different pattern of pits in the basic recording unit and the run-ins and run-outs results reliable detection with a lower error rate (Column 5, lines 49-51).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made for the apparatus of Kondo to have run-in and run-out pit patterns different from that of the basic recording block in order to lower the error rate which results from unreliable detection.

Claims 25 and 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kondo et al (U.S. 6,930,977) and in further view of Kondo (US PgPub 2003/0053404).

Regarding claim 25, Kondo et al disclose a read-only optical information storage medium (Column 14, lines 49-52) comprising a plurality of areas (Figure 20), including a burst cutting area (Column 17, lines 3-4), a lead-in area (Column 16, lines 63-64), a user data area (Figure 20, Element 311), and a lead-out area (Figure 20, 311, outer circumference) in which data is recorded in the form of pits (Column 16, lines 59-Column 17, line 7. As shown in US Patent 5,617,408, Figure 3, the BCA has a materially different pit pattern than is disposed upon the remainder of the disc. This is due to the fact that the information in the BCA is different than that of the remainder of the disc. Thus, the pit patterns cannot be identical and are different), wherein a pattern

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of pits formed in the burst cutting area is different from a pattern of pits formed in at least one of the lead-in area and the user data area (Column 16, lines 59-Column 17, line 7).

Kondo et al do not disclose generating a first pit pattern and a second pit pattern according to first and second modulation methods. In the same field of endeavor, Kondo discloses the use of two or three different modulation methods on different areas of the disc (Paragraph 81).

One of ordinary skill in the art at the time of the applicant's invention would have found it obvious to provide the multiple modulation methods of Kondo to the information recording medium of Kondo et al, motivation being to distinctly distinguish between adjacent/different areas, which results in higher reproduction quality.

Regarding claim 27, Kondo discloses a recording modulation method used in the burst cutting area is different from a recording modulation method used in at least one of the lead-in area and the user data area (Paragraph 81. Kondo discloses the use of different modulation methods for different areas on the disc.)

Regarding claim 28, Kondo discloses the recording modulation method used in the burst cutting area, the lead-in area, and the user data area is one of a RLL(d,k) modulation method (Paragraph 94. NRZI is an equivalent to RLL(d,k) modulation) and a bi-phase modulation method (Paragraph 94).

Regarding claim 29, Kondo discloses at least one of the burst cutting area, the lead-in area, the user data area, and the lead-out area is divided into a plurality of sub-areas, and the pits in the sub-areas are formed using different modulation methods

(Paragraph 81. Kondo discloses the use of two different modulation methods in the same recording area).

Regarding claim 30, Kondo discloses the lead-in area comprises first and second sub areas (Paragraph 81. Kondo discloses that two different modulation methods can be adopted in the same recording area), the first area uses one of the RLL (d,k) modulation method and the bi-phase modulation method (Paragraph 94), and the second area uses a different recording modulation method from the first area (Paragraphs 81 and 94. Kondo discloses the use of different modulation methods in the same areas, and that these modulation methods be used in combination).

### ***Response to Arguments***

The provisional double patenting rejections to claims 1-30 have been withdrawn due to the timely filing of applicant's Terminal Disclaimer.

In the last paragraph of page 7, which continues onto page 8 of applicant's remarks, the applicant argues that Kondo only discloses one pit pattern, and that there is no disclosure of a second pit pattern. However, Kondo discloses a first specific pit pattern in Column 16, line 59-Column 17, line 7. As shown in US Patent 5,617,408, Figure 3, the BCA has a materially different pit pattern than is disposed upon the remainder of the disc. This is due to the fact that the information in the BCA is different than that of the remainder of the disc. Thus, the pit patterns cannot be identical and are different. The second pit pattern is thus corresponding to Figs. 3 and 21 as pointed out by the applicant.

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In paragraphs 2 and 3 of page 8, applicant has a similar argument regarding a single type of pit pattern. The rebuttals for these arguments are substantially similar to the reasons set forth above.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas D. Alunkal whose telephone number is (571)270-1127. The examiner can normally be reached on M-F 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on (571)272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Thomas Alunkal

WAYNE YOUNG  
SUPERVISORY PATENT EXAMINER